

CLAIMS

1. A service gateway for connecting at least one local client to an external network, the service gateway being operable to hold at least one service module for
5 providing a corresponding service, wherein the service gateway comprises a control mechanism that is operable in response to a request for a service provided by a service module not present at the service gateway, to send a message to an external source for resolving the absence of a service module at the gateway in one or more iterations until a response from the external service identifies
10 information including a service module held by the gateway that enables resolution of the absent service module(s).
2. The service gateway of claim 1, comprising a record of service modules held by the gateway including a reference to the service module, the control mechanism
15 being operable:
- to react to a request identifying a first service module by accessing the record to identify if the first service module is held by the service gateway and:
 - using the associated pointer to cause the first service module to
20 provide the corresponding service if the first service module is held by the service gateway; and
 - requesting support from an external source by sending a message to the external source including the identity of the first service module if the first service module is not held by the service
25 gateway; and
 - to react to a response from the external source identifying a second service module by accessing the record to identify if the second service module is held by the service gateway and:

- using the associated pointer to cause the second service module to provide the corresponding service if the second service module is held by the service gateway; and
 - requesting support from an external source by sending a message to the external source including the identity of the second service module if the second service module is not held by the service gateway.
3. The service gateway of claim 2, wherein the control mechanism is operable to:
- react to a response from the external source identifying a further service module by accessing the record to identify if the further service module is held by the service gateway and:
 - using the associated pointer to cause the further service module to provide the corresponding service if the further service module is held by the service gateway; and
 - requesting support from an external source by sending a message to the external source including the identity of the further service module if the further service module is not held by the service gateway.
4. The service gateway of any preceding claim, wherein the control mechanism is operable to compare successive responses from an external source to identify response duplication indicative of a recursive error.
5. The service gateway of any preceding claim, wherein the control mechanism reacts to the identification of a service module and associated data in a response from an external source to supply the data to the identified service module, if held by the service gateway, for processing by the service module.

6. The service gateway of any preceding claim, wherein an external source is a service provider.
7. The service gateway of any preceding claim, wherein an external source is a service gateway operator.
8. A computer program comprising computer code operable in a service gateway computer for connecting at least one local client to an external network, the program code being operable:
- 10 - to support at least one service module at the service gateway for providing a corresponding service; and
 - in response to a request for a service provided by a service module not present at the service gateway, to send a message to an external source for resolving the absence of a service module at the gateway in one or more iterations until a response from the external service identifies information including a service module held by the gateway that enables resolution of the absent service module(s).
9. The computer program of claim 8, the program code being operable to maintain a record identifying each service module held by the service gateway with an associated reference to that service module, and:
- 20 - to react to a request identifying a first service module by accessing the record to identify if the first service module is held by the service gateway and:
 - 25 - using the associated pointer to cause the first service module to provide the corresponding service if the first service module is held by the service gateway; and
 - requesting support from an external source by sending a message to the external source including the identity of the first service

module if the first service module is not held by the service gateway; and

- to react to a response from the external source identifying a second service module by accessing the record to identify if the second service module is held by the service gateway and:
 - using the associated pointer to cause the second service module to provide the corresponding service if the second service module is held by the service gateway; and
 - requesting support from an external source by sending a message to the external source including the identity of the second service module if the second service module is not held by the service gateway.
10. The computer program of claim 9, wherein the program code is operable to:
- react to a response from the external source identifying a further service module by accessing the record to identify if the further service module is held by the service gateway and:
 - using the associated pointer to cause the further service module to provide the corresponding service if the further service module is held by the service gateway; and
 - requesting support from an external source by sending a message to the external source including the identity of the further service module if the further service module is not held by the service gateway.
11. The computer program of any of claims 8 to 10, wherein the control mechanism is operable to compare successive responses from an external source to identify response duplication indicative of a recursive error.

12. The computer program of any of claims 8 to 11, wherein the computer code reacts to the identification of a service module and associated data in a response from an external source to supply the data to the identified service module, if held by the service gateway, for processing by the service module.
- 5
13. The computer program of any of claims 8 to 12, wherein an external source is a service provider.
14. The computer program of any of claims 8 to 13, wherein an external source is a service gateway operator.
- 10
15. A carrier medium carrying a computer program according to any of claims 8 to 14.
- 15 16. A service gateway system comprising a processor and memory, the system being configured to provide a service gateway according to any of claims 1 to 7.
17. A service gateway system of claim 16, comprising a computer program according to any of claims 8 to 14.
- 20
18. A method of servicing at least one local client connected to an external network via a service gateway, the method comprising:
- holding at least one service module at the gateway for providing a corresponding service;
 - 25 - in response to a request for a service provided by a service module not present at the service gateway, sending a message to an external source for resolving the absence of a service module at the gateway in one or more iterations until a response from the external service identifies

information including a service module held by the gateway that enables resolution of the absent service module(s).

19. The method of claim 18, comprising:
- 5 - maintaining a record in the service gateway that identifies each service module held by the service gateway with an associated pointer to that service module;
- reacting to a request identifying a first service module by accessing the record to identify if the first service module is held by the service gateway
- 10 and:
- using the associated pointer to cause the first service module to provide the corresponding service if the first service module is held by the service gateway; and
- requesting support from an external source by sending a message
- 15 to the external source including the identity of the first service module if the first service module is not held by the service gateway; and
- reacting to a response from the external source identifying a second service module by accessing the record to identify if the second service module is held by the service gateway and:
- 20 - using the associated pointer to cause the second service module to provide the corresponding service if the second service module is held by the service gateway; and
- requesting support from an external source by sending a message
- 25 to the external source including the identity of the second service module if the second service module is not held by the service gateway.
20. The method of claim 19, comprising:

- reacting to a response from an external source identifying a further service module by accessing the record to identify if the further service module is held by the service gateway and:
 - using the associated pointer to cause the further service module to provide the corresponding service if the further service module is held by the service gateway; and
 - requesting support from an external source by sending a message to the external source including the identity of the further service module if the further service module is not held by the service gateway.
21. The method of any of claims 18 to claim 20, comprising comparing successive responses from an external source to identify response duplication indicative of a recursive error.
22. The method of any of claims 18 to 21, comprising reacting to the identification of a service module and associated data in a response from an external source to supply the data to the identified service module, if held by the service gateway, for processing by the service module.
23. The method of any of claims 18 to 22, comprising requesting support from an external service provider if a given service module is not held by the service gateway.
24. The method of any of claims 18 to 23, comprising requesting support from an external service gateway operator if a given service module is not held by the service gateway.